CLAIM AMENDMENTS

1. (Currently amended) A method, comprising the steps of:

introducing a plurality of voids into a polymeric material, wherein the plurality of voids fill up to twenty-five percent of a total volume of the polymeric material ~~introducing of the plurality of voids reduces a density of the polymeric material and promotes a decrease in a bulk modulus of the polymeric material~~;

buffering one or more sensor fibers having one or more stress sensitive components in abutment with a portion of the polymeric material from one or more stresses through employment of the portion of the polymeric material that comprises one or more voids of the plurality of voids; and

accommodating a movement of the portion of the polymeric material through compression of one or more of the one or more voids.

2. (Original) The method of claim 1, wherein the step of introducing the plurality of voids into the polymeric material comprises the steps of:

adding the plurality of voids into a resin of the polymeric material; and

curing the plurality of voids and the resin to create a potting compound that comprises the plurality of voids.

3. (Original) The method of claim 2, further comprising the steps of:

encapsulating one or more of the one or more stress sensitive components in the potting compound; and

accommodating an expansion of the one or more stress sensitive components through compression of the one or more of the one or more voids.

4. (Previously presented) The method of claim 1, wherein the plurality of voids are contained within a plurality of hollow compressible microballoons, and wherein the step of introducing the plurality of voids into the polymeric material comprises the step of:

adding the plurality of hollow compressible microballoons to the polymeric material.

5. (Previously presented) The method of claim 4, wherein the compressible microballoons comprise a thin polymer wall that encapsulate a gas, and wherein the thin polymer wall promotes a reservation of space in the polymeric material for the gas, the method further comprising the step of:

accommodating the movement of the one or more stress sensitive components through compression of the gas which allows a partial collapse of the thin polymer wall.

6. (Previously presented) The method of claim 4, wherein the step of adding the plurality of hollow compressible microballoons to the polymeric material comprises the steps of:

employing a coupling agent to promote an adhesion between the plurality of hollow compressible microballoons and the polymeric material; and

employing the coupling agent to promote a decrease in a settling rate of the plurality of hollow compressible microballoons in the polymeric material.

7. (Withdrawn) The method of claim 1, wherein the plurality of voids are contained within a plurality of hollow compressible microfibers, wherein the step of introducing the plurality of voids into the polymeric material comprises the steps of:

adding the plurality of hollow compressible microfibers to the polymeric material; and

creating a plurality of void channels in the polymeric material.

8. (Withdrawn) The method of claim 1, wherein the plurality of voids comprise a plurality of gas bubbles within the polymeric material, wherein the step of introducing the plurality of voids into the polymeric material and the step of buffering the one or more stress sensitive components in abutment with the portion of the polymeric material from the one or more stresses through employment of the portion of the polymeric material that comprises the one or more voids of the plurality of voids comprise the step of:

spraying the polymeric material through an aerator component to introduce the plurality of gas bubbles into the polymeric material and to apply the polymeric material with the plurality of gas bubbles to the one or more stress sensitive components.

9. (Withdrawn) The method of claim 1, wherein the plurality of voids comprise a plurality of gas bubbles within the polymeric material, wherein the step of introducing the plurality of voids into the polymeric material comprises the steps of:

mixing the plurality of gas bubbles into the polymeric material; and

employing an air-entrainer to stabilize the plurality of gas bubbles in the polymeric material.

10. (Withdrawn) The method of claim 1, wherein the plurality of voids comprise a plurality of gas bubbles within the polymeric material, wherein the step of introducing the plurality of voids into the polymeric material comprises the steps of:

adding a chemical blowing agent to the polymeric material;

increasing the temperature of the chemical blowing agent;

releasing the plurality of gas bubbles from the chemical blowing agent into the polymeric material once the chemical blowing agent reaches a decomposition temperature; and

trapping the plurality of gas bubbles within the polymeric material.

11. (Withdrawn) The method of claim 1, wherein the plurality of voids comprise a plurality of gas bubbles within the polymeric material, wherein the step of introducing the plurality of voids into the polymeric material comprises the steps of:

placing a diffuser component substantially at a bottom of a container;

filling a portion of the container with the polymeric material;

activating the diffuser component to begin to release the plurality of gas bubbles into the polymeric material;

raising the diffuser component through the polymeric material to a position substantially at a top of the container; and

curing the polymeric material to preserve the plurality of gas bubbles within the polymeric material.

12. (Withdrawn) The method of claim 1, wherein the step of introducing the plurality of voids into the polymeric material comprises the steps of:

adding a plurality of dissolvable microstructures to the polymeric material; and

dissolving the plurality of dissolvable microstructures through an increase in temperature of the plurality of dissolvable microstructures to leave the plurality of voids in the polymeric material once the plurality of dissolvable microstructures reach an activation temperature.

13. (Withdrawn) The method of claim 1, wherein the plurality of voids comprise a plurality of gas bubbles within the polymeric material, wherein the step of introducing the plurality of voids into the polymeric material and the step of buffering the one or more stress sensitive components in abutment with the portion of the polymeric material from the one or more stresses through employment of the portion of the polymeric material that comprises the one or more voids of the plurality of voids comprise the steps of:

applying the polymeric material to the one or more stress sensitive components with a brush that comprises a plurality of hollow bristles; and

introducing the plurality of gas bubbles from a gas supply into the polymeric material through the plurality of hollow bristles.

14. (Previously presented) The method of claim 1, wherein the step of buffering the one or more sensor fibers having the one or more stress sensitive components in abutment with the portion of the polymeric material from the one or more stresses through employment of the portion of the polymeric material that comprises the one or more voids of the plurality of voids comprises the steps of:

forming a pressure-sensitive foam tape from the polymeric material with the plurality of voids;

applying a portion of the pressure-sensitive foam tape to the one or more stress sensitive components; and

encapsulating the portion of the pressure-sensitive foam tape and the one or more stress sensitive components with a potting compound.

15. (Original) The method of claim 1, wherein the step of accommodating the movement of the portion of the polymeric material through compression of the one or more of the one or more voids comprises the step of:

allowing compression of one or more of the one or more voids in response to an applied force to promote a decrease in a response force from the portion of the polymeric material to one or more of the one or more stress sensitive components.

16. (Withdrawn) A method, comprising the steps of:

introducing a plurality of voids into a potting compound;

encapsulating a fiber optic sensing coil of a fiber optic gyroscope with a portion of the potting compound that comprises one or more voids of the plurality of voids; and

promoting a decrease in a bias error of the fiber optic sensing coil though accommodation of an expansion of the fiber optic sensing coil by a compression of one or more of the one or more voids.

17. (Withdrawn) The method of claim 16, wherein the plurality of voids are contained within a plurality of hollow compressible microballons, wherein the step of introducing the plurality of voids into the potting compound comprises the step of:

adding the plurality of hollow compressible microballons to the potting compound.

18. (Withdrawn) The method of claim 16, wherein the step of promoting the decrease in the bias error of the fiber optic sensing coil though accommodation of the expansion of the fiber optic sensing coil by the compression of the one or more of the one or more voids comprises the step of:

promoting a decrease in a strain on the fiber optic sensing coil due to a contact between the fiber optic sensing coil and the potting compound by the compression of the one or more of the one or more voids upon the contact.

19. (Withdrawn) A method, comprising the steps of:

introducing a plurality of voids into a polymeric material;

coating one or more stress sensitive components with a portion of the polymeric material that comprises one or more of the plurality of voids; and

accommodating an expansion of the one or more stress sensitive components through compression of one or more of the one or more voids.

20. (Withdrawn) The method of claim 19, wherein the plurality of voids are contained within a plurality of hollow compressible microballons, wherein the step of introducing the plurality of voids into the polymeric material comprises the step of:

adding the plurality of hollow compressible microballons to the polymeric material.

21. (Previously presented) The method of claim 1, wherein the step of buffering the one or more sensor fibers having the one or more stress sensitive components comprises the steps of:

encapsulating a fiber optic sensing coil within the polymeric material that comprises the plurality of voids, wherein the fiber optic sensing coil comprises a first coil portion and a second coil portion, and wherein the first coil portion is adjacent to the second coil portion; and

locating one or more of the plurality of introduced voids between the first coil portion and the second coil portion.

22. (Previously presented) The method of claim 21, wherein the first coil portion comprises a first layer of the fiber optic sensing coil, and wherein the second coil portion comprises a second layer of the fiber optic sensing coil; and

wherein the step of locating one or more of the plurality of introduced voids between the first coil portion and the second coil portion comprises the step of:

locating one or more of the plurality of introduced voids between the first layer and the second layer.

23. (Previously presented) The method of claim 21, wherein the fiber optic sensing coil comprises a layer of a plurality of optical fiber windings, and wherein the first coil portion comprises a first optical fiber winding of the plurality of optical fiber windings, and wherein the second coil portion comprises a second optical fiber winding of the plurality of optical fiber windings; and

wherein the step of locating one or more of the plurality of introduced voids between the first coil portion and the second coil portion comprises the step of:

locating one or more of the plurality of introduced voids between the first winding and the second winding.

24. (New) The method of claim 2, wherein the step of adding the plurality of voids into the resin of the polymeric material further comprises the step of adding the plurality of voids into the resin of the polymeric material in a substantially uniform distribution.

25. (New) The method of claim 1, wherein the plurality of voids comprise a diameter that is smaller than a distance of separation between adjacent portions of the one or more sensor fibers.

26. (New) The method of claim 25, wherein the diameter of each of the plurality of voids is less than fifty micrometers.

27. (New) The method of claim 1, wherein the plurality of voids fill ten percent of the total volume of the polymeric material.